

Xilinx is committed to providing earth friendly solutions. We sold our first lead free (Pb-free) component in 2002, and now the majority of the components we sell are Pb-free. Sale of Pb-free components keeps tons of lead (Pb) out of our products and out of the world's landfills every year.

Xilinx components are in compliance with the following European Union (EU) Directives for:

- Waste electrical and electronic equipment (WEEE)
- Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
- End-of Life Vehicles (ELV)

Amongst the benefits of these EU Directives are:

- Reduced use of hazardous substances
- Reduced toxicity of waste electrical and electronic equipment (WEEE)
- Reduced leaching in landfills because WEEE contains less hazardous material
- Reduced toxicity to humans and the environment

The purpose of the RoHS Directive 2002 is to harmonise the laws of the EU Member States on restrictions of the use of hazardous substances in electrical and electronic equipment, and to contribute to the protection of human health and the environmentally sound recovery and disposal of WEEE. The RoHS Directive 2002 identifies the following substances as hazardous:

- Cadmium
- Mercury
- Hexavalent Chromium
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDE)
- Lead (Pb)
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate

The RoHS legislation sets an upper limit for the use of these hazardous substance based on weight. Pb content in lead plating or solder balls must be less than 0.1% by weight of solder which is equivalent to 1000ppm of Pb. Pb is the most common and problematic of the hazardous substances and therefore "Pb-free" is commonly used interchangeably for RoHS compliant products.

Currently, Xilinx offers both Pb-based and Pb-free product options in compliance with RoHS legislation.

There are applications exempted from the restrictions in the RoHS legislation. Exemptions which may be of particular interest to Xilinx customers include exemption 15 [Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip

packages]. Exemption 15 renewal is currently under review by EU and until final decision is taken, existing exemption will remain valid. Once renewal decision is taken by EU, there will be sufficient time provided to adopt to the newer regulations.

At Xilinx, we acknowledge that customers may wish to evaluate material before the exemptions are reviewed. Xilinx has successfully completed Pb-free Flip chip qualification for all flip chip products (excludes stacked die or products with silicon interposer technology) and can provide additional information on these product qualifications, upon request.

Revision History

The following table shows the revision history for this document

Date	Version	Description of Revisions
03/02/10	1.0	Initial Xilinx release.
06/06/12	1.1	Updated to reflect changes in RoHS Directive recast
06/29/12	1.2	Clarify expiry date for exemptions 7(b) and 15
02/28/17	1.3	Updated to reflect the current list of hazardous substances

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